

QUARTERLY REPORT – PUBLIC PAGE

Investigate Fundamentals and Performance Improvements of Current In-Line Inspection Technologies for Mechanical Damage Detection

Date of Report: July 31, 2008

Contract No: DTPH56-06-T-000016

Prepared For: United States Department of Transportation
Pipeline and Hazardous Materials Safety Administration
Office of Pipeline Safety

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For Period Ending: July 31, 2008



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Technical Status

The Phase I report, which addresses the measurement of technology performance, is complete and submitted to PRCI for release and posting.

The research has progressed into Phase II. Phase II testing is intended to provide additional understanding of the capabilities for current mechanical damage technologies (based on data used in measurement of technology performance within Phase I). The detailed scope for Phase II requires data input from participating pipeline operators and the delay in obtaining this data will require a modification to the original schedule, as detailed further below.

The project team identified six (6) mechanical damage technologies from the Phase I research. These demonstrate some capability to detect and discriminate dents with coincident metal loss or cracks. Phase I research concluded that the available validation data provided limited understanding of capability with regard to dents with metal loss or with cracks. The limitations were due to small validation sample sizes, and incomplete and insufficient validation measurement data.

The Phase II scope involves obtaining mechanical damage excavation plans from pipeline operators for 2008 and 2009 via questionnaire. The excavation plans are based on current in-line inspection technology providing opportunities for validation excavations. In addition, laboratory testing to fully understand measurement errors, inherent in validation measurement protocols, is being conducted. These validated protocols will be made available to participating pipeline operators for use during the validation collection. The field data will be compared against the predictions made by the 6 technologies identified in Phase I to compare capability to detect and discriminate mechanical damage.

Results and Conclusions

A questionnaire was developed and distributed to the pipeline operators comprising the Project Team to identify pipeline inspections recently conducted using the current mechanical damage technologies identified in Phase I.

It is anticipated that the responses from the questionnaires will provide opportunities for validation measurements during 2008 and 2009. The performance of validation measurements is extremely important to compare capability for detecting and discriminating dents and dents with metal loss. Therefore, laboratory work continues within Phase II to understand the confidence, certainty and tolerance for the most common direct measurement protocols. The first step was to understand the performance issues associated with measurements of dents obtained from outside the pipe during validation and those obtained inside the pipe (i.e. those obtained from in-line inspection tools).

Laser mapping will be used as the benchmark for validating the performance of the current MD validation protocol. The reduction and analysis of laser mapping deformation data was performed to understand the relationship between ID and OD dent shape. Figure 2 illustrates an example of analysis performed on one of several plain dent validation features.

MDR-02A&B - External & Internal

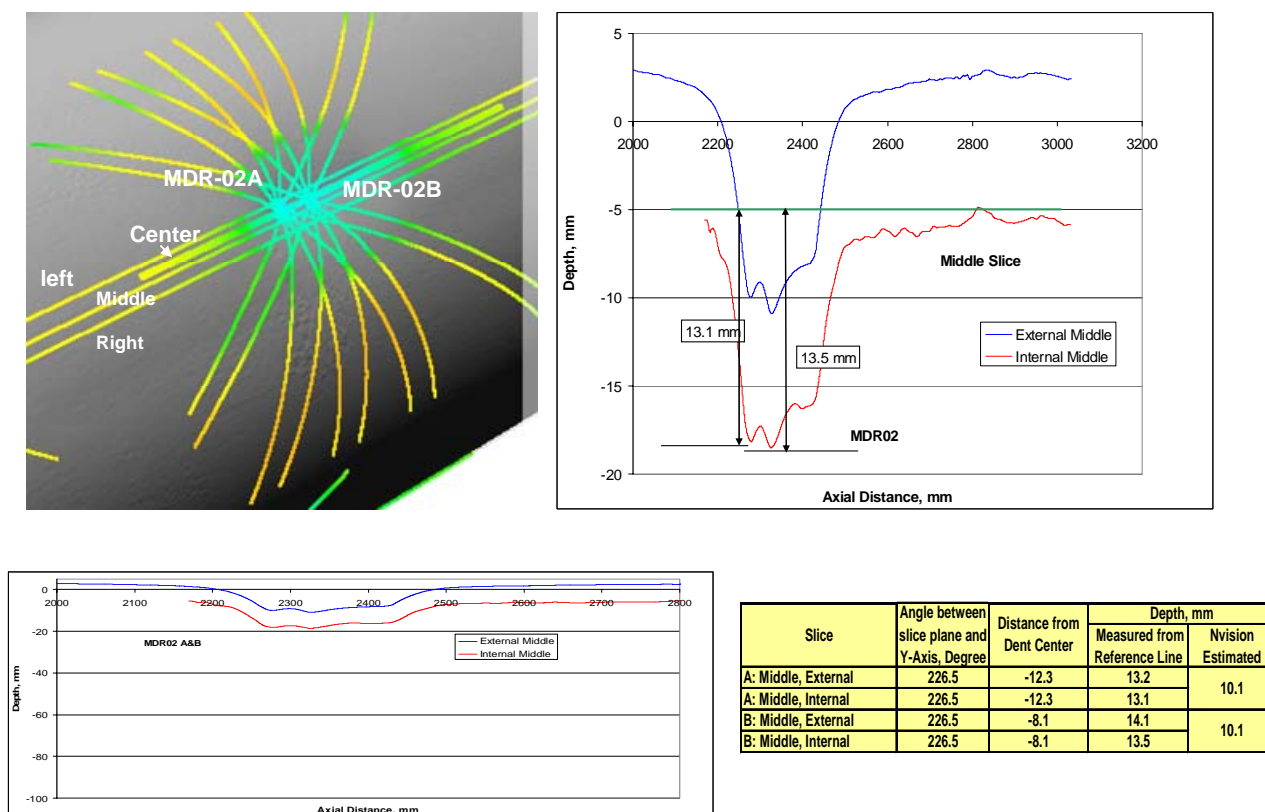


Figure 2: Example of data analysis performed on plain dent features to establish baseline for direct measurement protocols.

Validation protocol work together with identification and scheduling of the validation features from the pipeline operators is anticipated to be complete in the following quarter.

Issues, Problems or Challenges

Data response from pipeline operators and timing for validation excavations is a schedule challenge and is being actively managed. Responses to the questionnaire distributed to the member companies will be reviewed and provide the basis for determining the schedule for the project as we proceed with Phase II. Substantial coordination with the participating pipeline operators and their contractors will be required for the field verification activities.

In addition to coordinating efforts with pipeline operators for validation excavations, there are a number of other factors that have contributed to the need to extend the project schedule. PRCI is

currently working with DOT to establish appropriate modifications to the project schedule and provide the time needed to complete the Phase II work.

Plans for Future Activity

A project team meeting is being planned to coincide with the International Pipeline Conference 2008 in Calgary Alberta, Canada, September 2008.